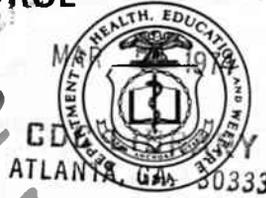


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Morbidity and Mortality



U.S. DEPARTMENT OF HEALTH, EDUCATION, AND WELFARE PUBLIC HEALTH SERVICE
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EPIDEMIOLOGIC NOTES AND REPORTS

AMPICILLIN-RESISTANT *HEMOPHILUS INFLUENZAE*
MENINGITIS — Maryland, Georgia

Case 1

On December 14, 1973, an 18-month-old boy from Patuxent, Maryland, became febrile and irritable after 2 weeks of minor upper respiratory symptoms. Otitis media was diagnosed and treated with oral ampicillin. On December 16, the child was anorectic, and by December 18, a general decrease in muscle tone was noted. On December 19, he was admitted to the Patuxent Naval Hospital, Maryland, with a clinical diagnosis of meningitis. Examination of the cerebrospinal fluid (CSF) revealed 1400 white blood cells with 90% neutrophils, protein 175 mg%, and glucose 19 mg% (blood glucose 128 mg%). CSF gram stain showed gram-negative pleomorphic rods, and the culture grew *Hemophilus influenzae*

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type b. The child was given one gm of ampicillin intramuscularly and transferred to the National Naval Medical Center, Bethesda, Maryland, where treatment was continued with

TABLE I. CASES OF SPECIFIED NOTIFIABLE DISEASES: UNITED STATES
(Cumulative totals include revised and delayed reports through previous weeks)

DISEASE	9th WEEK ENDING		MEDIAN 1969-1973	CUMULATIVE, FIRST 9 WEEKS		
	March 2, 1974	March 3, 1973		1974	1973	MEDIAN 1969-1973
Aseptic meningitis	36	28	25	314	320	320
Brucellosis	1	—	2	11	16	16
Chickenpox	3,870	6,696	—	30,579	44,702	—
Diphtheria	3	—	3	18	23	23
Encephalitis:						
Primary: Arthropod-borne and unspecified . . .	17	26	19	135	145	177
Post-Infectious	4	3	4	35	34	40
Hepatitis, Viral:						
Type B	151	143	143	1,452	1,214	1,214
Type A	892	997	1,125	7,649	8,616	9,829
Type unspecified	119	—	—	1,341	—	—
Malaria	5	4	39	30	31	417
Measles (rubeola)	794	780	820	4,360	5,547	6,028
Meningococcal infections, total	36	36	76	245	281	543
Civilian	35	34	57	242	270	470
Military	1	2	3	3	11	45
Mumps	1,730	1,965	2,369	14,301	16,211	19,840
Pertussis	33	—	—	274	—	—
Rubella (German measles)	296	978	1,180	1,961	4,512	6,096
Tetanus	—	1	2	7	9	11
Tuberculosis, new active	635	649	—	4,694	4,837	—
Tularemia	4	—	1	17	13	19
Typhoid fever	5	12	7	56	38	41
Typhus, tick-borne (Rky. Mt. spotted fever) . . .	1	1	—	14	5	3
Venereal Diseases:						
Gonorrhea	15,845	14,396	—	144,838	129,332	—
Syphilis, primary and secondary	468	505	—	4,067	4,344	—
Rabies in animals	59	59	86	404	507	611

TABLE II. NOTIFIABLE DISEASES OF LOW FREQUENCY

	Cum.		Cum.
Anthrax:	1	Poliomyelitis, total:	—
Botulism: Ala. 1	3	Paralytic:	—
Congenital rubella syndrome: Ariz. 1, Tex. 1 . . .	12	Psittacosis: Calif. 1, Ohio 1	4
Leprosy: Ill. 1, Tex. 1	8	Rabies in man:	—
Leptospirosis: Minn. 1	10	Trichinosis: N.Y. Ups 1	23
Plague:	—	Typhus, murine: Va. 1	4

MENINGITIS - Continued

intravenous ampicillin 400 mg/Kg/day, administered every 4 hours. Eighteen hours after admission, there was no improvement in his clinical condition, and oral mucosal bleeding was noted. Laboratory examinations revealed a hematocrit of 27%, white blood cell count 7,900, platelet count 8,000, fibrinogen 1240 mg%, bilirubin 2.4 mg%, and absence of fibrin split products. He was transfused with platelets and whole blood, and gentamicin was begun. Repeat lumbar puncture 30 hours after admission showed 700 white blood cells with 600 neutrophils, protein greater than 200 mg%, and glucose 0 mg%. Gram stain showed numerous organisms, and CSF culture was still positive for *H. influenzae* type b. The boy subsequently developed diffuse rales, cyanosis, hepatomegaly, oliguria, and melanotic stools. He died following cardiorespiratory arrest 35 hours after admission.

At autopsy, diffuse purulent leptomeningitis, bilateral interstitial pneumonia, and hemorrhagic esophagitis and gastritis were noted.

Tube dilution antibiotic sensitivities of the CSF organism performed by CDC showed a minimum inhibitory concentration (MIC) of 8.0 µg/ml and minimum bactericidal concentration (MBC) of 32 µg/ml. Even higher MIC levels were found in the Clinical Laboratory Unit, National Institutes of Health. Disc sensitivity testing showed a clear zone of only 6-8 mm (sensitive strains have clear zones greater than 21 mm).

Case 2

A 4-month-old boy was admitted to an Atlanta, Georgia, hospital on December 31, 1973, with a 2-day history of irritability and fever. One day prior to admission he had been diagnosed as having otitis media and was treated with oral ampicillin. Physical examination on admission revealed a temperature of 102°F, infected left ear drum, stiff neck, and positive Kernig and Brudzinski signs. Initial lumbar puncture showed 8,500 white blood cells per mm³, predominantly neutrophils (98%), sugar 20 mg% (blood sugar 110 mg%), and protein 300 mg%; the gram stain demonstrated gram-negative pleomorphic rods which grew out as *H. influenzae* type b. Ampicillin, 400 mg/Kg/day (IV), was administered at 6-hour intervals.

The child continued to be irritable with daily fevers of 101-105°F. On the 5th hospital day, he developed right-sided seizures, which became generalized, and a right hemiparesis. A repeat lumbar tap revealed cloudy CSF with 10,300 white blood cells per mm³, 100% neutrophils, sugar 25 mg% and protein 312 mg%. Gram-negative pleomorphic rods were present, and *H. influenzae* type b was again grown from the CSF. Ampicillin was discontinued, and chloramphenicol, 100 mg/Kg/day (IV), was administered at 6-hour intervals. The child's temperature became normal within 3 days, and subsequent lumbar punctures showed fewer cells in the CSF and a negative culture. Four weeks after admission, the CSF showed 22 white blood cells per mm³, mostly lymphocytes, 80 mg% protein, and 30 mg% sugar. A residual right-sided hemiparesis was present at discharge on January 28.

Tube dilution antibiotic sensitivity of the CSF organism performed by CDC showed MIC of 16.0 µg/ml and MBC of 32 µg/ml to ampicillin. Sensitivity by ampicillin disc showed a clear zone of 6 mm. These results were in agreement with sensitivities reported by the Epidemiology Laboratory, Grady Memorial Hospital.

(Reported by John H. Vollman, M.D., LCDR MC USNR, Chief, Pediatric Service, Patuxent Naval Hospital; John W. McReynolds, M.D., Lt MC USNR, Ward Medical Officer, Department of Pediatrics, National Naval Medical Center, Bethesda, Maryland; M. Ousama Tomeh, M.D., Pediatric Infectious Disease Fellow, Andre J. Nahmias, M.D., Chief, Department of Pediatric Infectious Diseases and Immunology, Jonas A. Shulman, M.D., Chief, Division of Infectious Diseases, Emory University School of Medicine; Anita K. Bahn, M.D., State Epidemiologist, Maryland State Department of Health and Mental Hygiene; John E. McCroan, Ph.D., State Epidemiologist, Georgia Department of Human Resources; James D. MacLowry, M.D., Chief, Clinical Pathology Department of the Clinical Center, National Institutes of Health; the Antimicrobics Investigations Unit, Clinical Bacteriology Section, Bacteriology Division, Bureau of Laboratories, CDC.)

Editorial Note

These 2 unrelated cases are the first cases of ampicillin-resistant *H. influenzae* type b meningitis reported to CDC, and no reports of other such cases have been published in the United States.

Ampicillin disc sensitivity tests of *H. influenzae* isolates, though often used, frequently may indicate ampicillin resistance when tube dilution tests do not confirm this interpretation. CDC has studied more than 20 strains of *H. influenzae* referred from laboratories in the United States as resistant to ampicillin but has confirmed only these 2 strains as ampicillin resistant by tube and disc tests.

Tests on *H. influenzae* isolates for susceptibility to ampicillin are done most often with ampicillin discs or occasionally by tube dilution. If the disc sensitivity test is used, it is extremely important that the ampicillin discs be stored at -20°C, and be placed in a desiccator jar in a refrigerator prior to use and after the package is opened. Growth from an overnight chocolate-agar plate should be adjusted to approximately 10⁸ colony-forming units (c.f.u.)/ml and swabbed onto a medium which consists of Mueller-Hinton agar with 5% chocolate (hemolyzed) defibrinated rabbit blood plus supplement. Ampicillin susceptible strains, according to the Kirby-Bauer interpretive standard, will have zone sizes greater than 21 mm. Strains that are resistant to ampicillin will show a definite zone of inhibition of growth, even though there may be colonies up to the edge of the disc.

The tube dilution test used at CDC is done with Mueller-Hinton broth plus 10% peptic digest of blood (Fildes reagent) and an inoculum of approximately 10⁴ c.f.u./ml. MICs obtained by this method are comparable to those obtained by an agar dilution method with Levinthal agar (1).

Reference

1. McLinn SE, Nelson JD, Haltalin KC: Antimicrobial susceptibility of *Hemophilus influenzae*. Pediatrics 45:827-838, 1970

GIARDIA LAMBLIA INFECTION IN TRAVELERS TO THE SOVIET UNION

In July 1973, CDC was notified of 3 cases of *Giardia lamblia* infection in nurses who had recently returned from a tour of the Soviet Union. Subsequent investigation revealed

that the nurses were members of 1 of 3 professional seminar tours sponsored by the American Association of Nurse-Anesthetists. The first 2 tour groups departed on May 6, 1973,

and returned on May 15, while the third group traveled between May 13 and 23. Between September and December 1973, information was sought on the 399 tour participants concerning their age, sex, occupation, illness, symptoms, duration of illness, hotel lodging, food and water exposure, and health precautions. Nearly 80% of them (318) responded. Stool specimens were obtained from 136 (43%) of those who provided information. The group ranged in age from 18 to 76, and 282 were females. Illness during the tour or shortly after return from the Soviet Union was reported by 113 (36%) persons.

An individual was considered to have giardiasis if he had either 1) a positive stool examination or 2) a diarrheal illness lasting 1 week or longer. Using this definition, 70 (22%) of the 318 persons completing the questionnaire were diagnosed as having giardiasis. Of the 70 cases, 30 had positive stool examinations, 22 negative stool examinations, and 18 did not submit a specimen. There was no difference in symptoms, duration of illness, and incubation period between ill cases diagnosed by positive stool examination and those diagnosed clinically. Eight individuals who had positive stools were asymptomatic. Diarrhea was the most common symptom followed by cramps, nausea, and weakness (Table 1). Fever occurred in only 10 cases. The mean duration of illness was 6.5 weeks (range - 1 to 30 weeks), and the mean time period until the onset of illness since entering the Soviet Union was 14.7 days (range - 1 to 43 days).

All members of the tour group visited both Moscow and Leningrad. Infection with *G. lamblia* was not related to ingestion of uncooked vegetables or ice cream or eating at a specific restaurant. However, a history of drinking tap water was more common among cases than non-cases. Only 2 of the 69 cases from whom information was obtained gave a history of not drinking tap water compared with 33 of 243 non-cases ($\chi^2 = 5.13$, $p < 0.05$).

(Reported by Mark Kaplan, M.D., Carol Singer, M.D., Infectious Disease Fellows, and Donald Armstrong, M.D., Chief, Infectious Disease Service, James Ewing Memorial Hospital, New York City; Pascal J. Imperato, M.D., Director, Bureau of Infectious Disease Control, New York City Department of Health; and the Parasitic Diseases and Veterinary Public Health Division, Bureau of Epidemiology, CDC.)

Editorial Note

This outbreak of *G. lamblia* infection among participants in tours to the Soviet Union is representative of other epidemics of giardiasis in travelers to the USSR reported to CDC since 1969. The first reports of epidemic giardiasis among travelers to the Soviet Union appeared in 1970 (1,2). Since then, reported outbreaks have occurred in American (3) and Swedish travelers (4,5).

G. lamblia is a flagellated protozoan of the small intestine. Clinical manifestations of *Giardia* infection can range from asymptomatic cyst passage to severe malabsorption syndrome. Illness usually begins toward the end of the trip or shortly after return home, and the mean duration of illness is 2-3 months. Prominent symptoms include diarrhea (often

Table 1
Symptoms of 62 Giardiasis Cases

Symptom	Percent with Symptom (N = 62)
Diarrhea	100
Cramps	85
Nausea	77
Weakness	71
Weight loss	68
Abdominal distention	66
Greasy stools	64
Belching	44
Vomiting	32
Fever	16

greasy and malodorous), abdominal cramps, fatigue, weight loss, flatulence, anorexia, and nausea. Treatment with metronidazole or quinacrine is highly effective in both symptomatic and asymptomatic infections.

Between 1969 and 1973, CDC received information on 1,419 persons who were members of 47 tour groups that had traveled to various cities in the Soviet Union. Among these persons, a case was defined as a person with a positive stool examination for *G. lamblia* or diarrhea lasting more than 1 week. There was no difference in symptoms, duration of illness, and incubation period between ill persons diagnosed by positive stool examination and those diagnosed clinically. An attack rate of 23% was found among these groups. Epidemiologic evidence implicated Leningrad as the site of infection ($\chi^2 = 51.14$, $p < 0.001$) and tap water as the probable vehicle of transmission ($\chi^2 = 7.13$, $p < 0.01$). Many patients after their return to the United States underwent unnecessary laboratory tests and suffered long delays before the diagnosis was made since many physicians did not include *Giardia* infection in their differential diagnosis of traveler's diarrhea.

Giardiasis should be considered in any person with a diarrheal illness lasting 1 week or longer who has recently traveled outside the United States. There is no known chemoprophylaxis for giardiasis. Although the ingestion of ice cream, unpeeled fruit, and inadequately cooked food are often associated with diarrheal disease in travelers, they were not associated with an increased risk of giardiasis in the studies reported here. Measures such as avoiding ingestion of tap water and of uncooked, unpeeled fruits and vegetables may be effective, although infection has been documented in persons who followed these precautions.

References

- Walzer PD, Wolfe MS, Schultz MG: Giardiasis in Travelers. *J Infect Dis* 124:235-237, 1971
- Center for Disease Control: Morbidity and Mortality Weekly Rep 19(47):455, 28 Nov 1970
- Fiumara N: Giardiasis in Travelers to the Soviet Union. *N Engl J Med* 288:1410-1411, 1973
- Jokipii L: Giardiasis in Leningrad. *Duodecim* 88:522-526, 1972
- Andersson T, Forssell J, Sterner G: Outbreak of giardiasis: Effect of a new antigiardiate drug, tinidazole. *Br Med J* 20:449-451, 1972

A HOSPITAL-BASED OUTBREAK OF HEPATITIS-A - Vermont

In November and early December 1973, an outbreak of hepatitis-A occurred among employees, including medical staff, students, and volunteers, at 1 unit of the Medical Center Hospital of Vermont in Burlington, Vermont. Sixty-six cases of hepatitis - 44 clinical and 22 subclinical - were

diagnosed.

Questionnaires requesting information on history of recent illness, exposure to hospital food or water, and other potential vehicles of infection were obtained from 2,276 of 2,684 hospital employees. Serum samples for SGPT determi-

HEPATITIS-A - Continued

nations were obtained from 975 personnel.

Eighty-nine percent of the 44 employees with clinical hepatitis (defined as an illness characterized by anorexia, malaise, nausea, and vomiting followed by dark urine) were icteric. Forty-two of these 44 cases were confirmed by enzyme testing, and 41 tested for the hepatitis-B antigen (HBAG) by solid-phase radioimmunoassay were negative. Sixteen of 17 persons with subclinical hepatitis (defined as an SGPT level more than twice the upper limit of normal, without dark urine or jaundice) who were tested for HBAG were negative, and 1 was positive.

The onset of clinical illness, dated from the first appearance of dark urine, is shown in Figure 1. Thirty-nine of the 44 cases occurred between November 18 and December 5, and 25 of them occurred in the 6-day period November 26-December 1. The rapid increase and decrease of cases strongly suggested a common-source outbreak, with exposure probably occurring in the last week of October and lasting no more than several days.

The attack rate of clinical hepatitis was 2.1%, and the overall estimated incidence of clinical and subclinical illness was 4.5%. Preliminary results of a survey of patients discharged from the hospital in late October and early November revealed that 2 (1%) patients had clinical hepatitis after leaving the hospital.

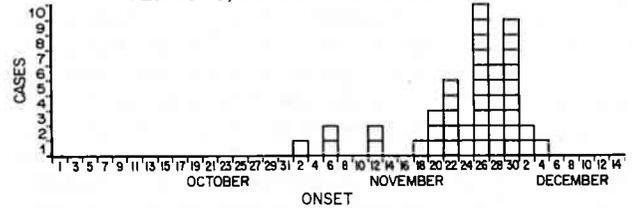
Analysis of the questionnaire survey showed an association between acquiring hepatitis and 1) eating in the cafeteria ($p < 0.01$) and 2) eating cafeteria-made sandwiches ($p < 0.02$). A matched case-control study was then performed using a more detailed food preference questionnaire. This study confirmed the association between acquiring hepatitis and eating cafeteria-made sandwiches: the sandwich preference rate for the cases was significantly higher than the rate for non-cases ($p < 0.001$).

Most foods for patients and employees are prepared in a hospital kitchen. Sandwiches for the employee cafeteria, however, are prepared separately and are not served to patients. An environmental survey of the hospital kitchen and cafeteria and investigation of food preparation activities revealed no gross deficiencies in food handling. However, an employee who prepared sandwiches during the period of probable exposure lived in the same household as 2 individuals who were clinically ill with hepatitis-A in October and November. While this employee did not report illness at that time and subsequently had a normal SGPT determination, it is possible that she was subclinically ill and could have transmitted virus through the sandwiches during that period.

Early in the outbreak, the affected unit was closed to all elective admissions, visitors were limited to family members, and prophylactic immune serum globulin was administered to employees, patients, and new admissions. The hospital resumed full operation when preliminary epidemiologic and environmental studies indicated that food and water, in general, were not implicated in the continued dissemination of disease. In addition, all food handlers were tested for SGPT elevations and were removed from work if their enzyme levels were greater than twice the upper limit of normal. Testing was continued at bi-weekly intervals for the next 6 weeks to determine if new cases were developing and to follow the course of those persons with abnormal values.

(Reported by William S. Tihen, M.D., Department of Pathology, and Joseph R. Mailloux, M.P.H., Assistant Administrator, Medical Center of Vermont; Vermont State Health Department; and 2 EIS Officers.)

Figure 1
HOSPITAL-ASSOCIATED HEPATITIS-A CASES
VERMONT, OCTOBER-DECEMBER 1973



Editorial Note

Despite the epidemiologic similarity between common-source outbreaks in restaurants and hospitals, the consequences of such an outbreak in a hospital are potentially more serious. In this instance, cafeteria-made sandwiches were identified as the responsible vehicle which allowed full resumption of hospital services in a short period of time. Hospitalized patients did not seem to be significantly affected by the outbreak.

The public health measures to be taken when hepatitis-A occurs in a food handler have not been as clearly defined as with other enteric illnesses partly because laboratory methods of detecting this virus have become available only very recently (1). Foodborne outbreaks of hepatitis-A are thought to result when food contacts hands or other objects contaminated with small amounts of fecal material. In 1 study, a pool of feces obtained from 6 ill persons 1 to 8 days after the onset of jaundice caused hepatitis-A in recipients when given orally, but stool obtained 11 days after onset of jaundice and later did not (2). Although it is clear that at least 1 of the 6 ill persons were excreting virus on at least 1 of the 8 days, this study does not clearly define a period following the onset of illness when food could be contaminated. It is recommended, however, that foodhandlers not work during their hepatitis-A illness and that they refrain from work for approximately 2 weeks following the onset of jaundice even if they have recovered clinically. Since persons with subclinical illness are potentially infective and since the peak in enzyme elevation coincides with the onset of jaundice in clinical illness, foodhandlers with subclinical illness probably should not work the 2 weeks after the peak in their enzyme elevation. Feces are also infective during the incubation period of hepatitis-A before clinical illness develops, and these precautions alone will not prevent all outbreaks of foodborne disease.

Immune serum globulin (gamma globulin) can reduce the number of clinical cases of hepatitis-A in exposed persons if administered soon after exposure. However, foodborne outbreaks of hepatitis-A are uncommon, and although the incidence is unknown, outbreaks do not occur each time a foodhandler develops hepatitis-A. Because of the large number of people who would otherwise receive immune serum globulin unnecessarily, it should not be routinely given to all persons who are exposed to potentially contaminated food unless hepatitis-A begins to occur in the exposed group. Later administration can still provide protection although it will be reduced.

Foodborne outbreaks of hepatitis-B have not been reported.

References

1. Feinstone SM, Kapikian AZ, Purcell RH: Hepatitis-A: Detection by immune electron microscopy of a viruslike antigen associated with acute illness. *Science* 182:1026-1028, 1973
2. Krugman S, Ward RW, Giles JP: The natural history of infectious hepatitis. *Am J Med* 32:717-728, 1962

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**TABLE III. CASES OF SPECIFIED NOTIFIABLE DISEASES: UNITED STATES
FOR WEEKS ENDING MARCH 2, 1974 AND MARCH 3, 1973 (9th WEEK)**

AREA	ASEPTIC MENIN- GITIS	BRUCEL- LOSIS	CHICKEN- POX	DIPHThERIA		ENCEPHALITIS			HEPATITIS, VIRAL			MALARIA	
						Primary: Arthropod- borne and Unspecified		Post In- fectious	Type B	Type A	Type Unspecified		
						1974	1973	1974	1974	1974	1974		
UNITED STATES	36	1	3,870	3	18	17	26	4	151	892	119	5	30
NEW ENGLAND	2	-	560	-	-	1	2	-	8	42	19	1	3
Maine *	-	-	10	-	-	-	-	-	-	7	-	-	-
New Hampshire *	1	-	37	-	-	-	-	-	2	1	-	-	-
Vermont	-	-	13	-	-	-	-	-	-	2	-	-	-
Massachusetts	-	-	216	-	-	1	1	-	5	10	19	1	1
Rhode Island	1	-	167	-	-	-	-	-	-	8	-	-	2
Connecticut	-	-	117	-	-	-	1	-	1	14	-	-	-
MIDDLE ATLANTIC	6	-	178	-	-	2	4	1	7	93	5	-	1
Upstate New York	2	-	76	-	-	-	4	-	1	55	1	-	-
New York City	-	-	90	-	-	2	-	-	4	17	-	-	1
New Jersey	1	-	NN	-	-	-	-	-	-	-	-	-	-
Pennsylvania *	3	-	12	-	-	-	-	1	2	21	4	-	-
EAST NORTH CENTRAL	7	-	1,763	-	-	1	11	-	23	171	11	1	3
Ohio *	2	-	371	-	-	-	6	-	13	31	-	1	2
Indiana	-	-	163	-	-	-	1	-	-	9	-	-	-
Illinois	-	-	-	-	-	-	2	-	-	28	2	-	-
Michigan	5	-	788	-	-	1	2	-	9	90	9	-	-
Wisconsin	-	-	441	-	-	-	-	-	1	13	-	-	-
WEST NORTH CENTRAL	1	-	434	-	-	8	2	-	6	33	18	-	1
Minnesota	-	-	-	-	-	2	-	-	3	1	1	-	-
Iowa	-	-	348	-	-	3	1	-	1	17	1	-	-
Missouri	1	-	10	-	-	1	-	-	1	-	16	-	-
North Dakota	-	-	16	-	-	-	-	-	-	1	-	-	-
South Dakota	-	-	-	-	-	-	-	-	-	3	-	-	1
Nebraska	-	-	7	-	-	1	-	-	1	1	-	-	-
Kansas	-	-	53	-	-	1	1	-	-	10	-	-	-
SOUTH ATLANTIC	5	-	282	-	1	1	1	1	22	207	14	3	6
Delaware	-	-	4	-	-	-	-	-	1	4	-	-	-
Maryland	-	-	3	-	-	-	-	1	2	13	-	-	-
District of Columbia	-	-	9	-	-	-	-	-	2	1	-	-	2
Virginia *	-	-	2	-	-	1	-	-	2	30	2	-	1
West Virginia	1	-	250	-	-	-	-	-	-	3	-	-	-
North Carolina	1	-	NN	-	-	-	-	-	4	29	1	1	1
South Carolina *	-	-	14	-	-	-	1	-	3	6	2	-	-
Georgia	-	-	-	-	-	-	-	-	-	39	-	-	-
Florida	3	-	-	-	1	-	-	-	8	82	9	2	2
EAST SOUTH CENTRAL	4	-	82	-	-	2	1	1	14	65	4	-	-
Kentucky	-	-	44	-	-	-	-	-	3	12	4	-	-
Tennessee	2	-	-	-	-	1	-	1	4	47	-	-	-
Alabama	2	-	17	-	-	1	-	-	5	1	-	-	-
Mississippi	-	-	21	-	-	-	1	-	2	5	-	-	-
WEST SOUTH CENTRAL	3	1	119	1	6	1	-	-	16	71	9	-	2
Arkansas	-	-	1	-	-	-	-	-	-	11	-	-	-
Louisiana *	1	1	NN	-	-	-	-	-	4	9	4	-	1
Oklahoma *	1	-	7	-	-	-	-	-	-	19	5	-	1
Texas	1	-	111	1	6	1	-	-	12	32	-	-	-
MOUNTAIN	-	-	142	-	1	-	-	-	4	51	19	-	1
Montana	-	-	44	-	-	-	-	-	2	17	2	-	-
Idaho	-	-	-	-	-	-	-	-	-	1	-	-	-
Wyoming	-	-	1	-	-	-	-	-	1	3	-	-	-
Colorado	-	-	29	-	-	-	-	-	-	-	8	-	1
New Mexico	-	-	37	-	1	-	-	-	-	11	-	-	-
Arizona	-	-	-	-	-	-	-	-	1	15	7	-	-
Utah	-	-	31	-	-	-	-	-	-	4	2	-	-
Nevada *	-	-	-	-	-	-	-	-	-	-	-	-	-
PACIFIC	8	-	310	2	10	1	5	1	51	159	20	-	13
Washington	-	-	279	2	8	-	-	-	5	12	8	-	-
Oregon	1	-	-	-	-	1	-	-	1	9	1	-	-
California	7	-	-	-	1	-	5	1	44	137	11	-	13
Alaska	-	-	6	-	1	-	-	-	-	-	-	-	-
Hawaii	-	-	25	-	-	-	-	-	1	1	-	-	-
Guam *	-	-	-	-	-	-	-	-	-	-	-	-	1
Puerto Rico	-	-	41	-	-	-	-	-	-	2	13	-	-
Virgin Islands *	-	-	34	-	-	-	-	-	3	2	-	-	-

*Delayed reports: Chickenpox: Me. 32, N.H. 16, Ohio delete 108, Nev. 1, Guam 1, V.I. 1 (1974)
 Encephalitis, post: Okla. delete 2 (1974)
 Hepatitis B: Penn.+2 (1973), Va. delete 1, Guam +1 (1974)

Hepatitis A: Penn. 5 (1973), Me. 4, N.H. delete 3, S.C. delete 1, La. delete 1, Nev. 5, Guam 9 (1974)
 Hepatitis Unspecified: N.H. 4 (1974)
 Malaria: Guam +1 (1974)

Morbidity and Mortality Weekly Report

TABLE III. CASES OF SPECIFIED NOTIFIABLE DISEASES: UNITED STATES
FOR WEEKS ENDING MARCH 2, 1974 AND MARCH 3, 1973 (9th WEEK) - Continued

AREA	MEASLES (Rubella)			MENINGOCOCCAL INFECTIONS, TOTAL			MUMPS		PERTUSSIS	RUBELLA		TETANUS
	1974	Cumulative		1974	Cumulative		1974	Cum. 1974	1974	1974	Cum. 1974	Cum. 1974
		1974	1973		1974	1973						
UNITED STATES	794	4,360	5,547	36	245	281	1,730	14,301	33	296	1,961	7
NEW ENGLAND	20	242	2,283	2	18	14	212	2,049	-	37	146	-
Maine *	-	9	9	-	-	-	43	332	-	2	13	-
New Hampshire *	7	128	395	-	4	1	-	84	-	2	6	-
Vermont	1	1	30	-	-	-	-	7	-	-	5	-
Massachusetts	6	53	1,107	1	6	5	28	339	-	24	79	-
Rhode Island	3	35	192	-	3	1	109	648	-	-	9	-
Connecticut	3	16	550	1	5	6	32	639	-	9	34	-
MIDDLE ATLANTIC	285	1,508	419	10	31	37	170	1,097	4	16	143	1
Upstate New York	4	22	85	8	11	9	33	213	3	12	46	-
New York City	10	73	253	1	9	9	6	165	1	1	29	-
New Jersey	255	1,179	48	1	8	9	57	309	-	-	57	1
Pennsylvania	16	234	33	-	3	10	74	410	-	3	11	-
EAST NORTH CENTRAL	385	1,786	1,527	7	26	29	595	4,354	9	80	765	-
Ohio	243	852	78	2	9	16	144	1,115	-	13	78	-
Indiana	12	57	136	-	-	1	49	412	-	9	218	-
Illinois	25	288	518	1	3	3	29	398	6	11	112	-
Michigan	97	476	505	2	8	7	287	1,808	-	37	274	-
Wisconsin	8	113	290	2	6	2	86	621	3	10	83	-
WEST NORTH CENTRAL	27	135	140	1	13	25	124	1,021	2	15	36	2
Minnesota *	-	75	10	-	4	-	-	20	-	-	2	-
Iowa	2	4	105	1	4	3	90	764	1	-	5	-
Missouri	7	17	9	-	3	13	9	91	1	3	8	2
North Dakota	-	12	8	-	1	2	1	5	-	-	5	-
South Dakota	-	1	-	-	-	2	-	1	-	-	-	-
Nebraska	-	1	1	-	-	1	4	35	-	-	3	-
Kansas	18	25	7	-	1	4	20	105	-	12	13	-
SOUTH ATLANTIC	32	149	164	6	50	42	243	1,341	-	74	189	1
Delaware	-	2	1	-	3	-	1	26	-	-	4	-
Maryland	-	2	-	2	8	10	6	25	-	-	-	-
District of Columbia	-	-	-	-	-	1	2	20	-	-	1	-
Virginia *	-	9	7	-	9	4	6	101	-	2	6	-
West Virginia	14	44	45	-	2	-	197	751	-	1	41	-
North Carolina	-	1	4	1	10	9	NN	NN	-	-	3	-
South Carolina	2	9	16	2	3	3	1	11	-	67	68	-
Georgia	-	1	7	-	4	8	-	-	-	-	2	-
Florida	16	81	84	1	11	7	30	407	-	4	64	1
EAST SOUTH CENTRAL	6	28	117	4	19	16	140	1,532	5	22	141	1
Kentucky	5	22	32	3	6	4	57	574	4	5	39	-
Tennessee	-	-	62	1	12	8	60	795	1	9	79	1
Alabama	1	1	-	-	1	2	23	145	-	8	16	-
Mississippi	-	5	23	-	-	2	-	18	-	-	7	-
WEST SOUTH CENTRAL	3	59	229	2	49	44	85	933	9	3	63	1
Arkansas	-	4	11	-	4	5	3	74	-	-	6	-
Louisiana	-	5	15	-	10	4	1	44	-	1	3	-
Oklahoma *	1	7	6	-	6	3	6	77	-	1	14	-
Texas	2	43	197	2	29	32	75	738	9	1	40	1
MOUNTAIN	21	167	157	-	7	10	46	497	-	11	94	-
Montana	1	110	1	-	-	1	18	87	-	-	55	-
Idaho	16	31	59	-	1	-	9	121	-	-	5	-
Wyoming	3	3	5	-	-	-	2	3	-	-	-	-
Colorado	1	8	20	-	-	2	12	180	-	8	20	-
New Mexico	-	12	65	-	3	1	4	103	-	1	10	-
Arizona	-	3	6	-	2	3	-	-	-	-	-	-
Utah	-	-	1	-	1	1	1	3	-	2	2	-
Nevada	-	-	-	-	-	2	-	-	-	-	2	-
PACIFIC	15	286	511	4	32	64	115	1,477	4	38	384	1
Washington	-	20	246	-	4	3	37	572	-	10	141	-
Oregon *	-	-	123	-	5	4	12	296	-	-	40	-
California	15	265	138	3	21	56	63	553	4	26	194	1
Alaska	-	-	-	1	2	1	2	43	-	-	-	-
Hawaii	-	1	4	-	-	-	1	13	-	2	9	-
Guam *	-	1	2	-	-	-	-	52	-	-	-	-
Puerto Rico	18	96	356	-	-	1	29	181	1	3	4	1
Virgin Islands	-	-	-	-	-	-	-	2	-	-	-	-

*Delayed reports: Measles: N.H. 2, Minn. 31 (1974)
Meningococcal Infections: N.H. 2 (1974)Mumps: Me. 27, N.H. 7, Okla. 2, Guam 8 (1974)
Rubella: Va. 1, Oregon delete 2 (1974)

TABLE III. CASES OF SPECIFIED NOTIFIABLE DISEASES: UNITED STATES FOR WEEKS ENDING MARCH 2, 1974 AND MARCH 3, 1973 (9th WEEK) - Continued

AREA	TUBERCULOSIS (New Active)		TULA-REMIA	TYPHOID FEVER		TYPHUS-FEVER TICK-BORNE (Rky. Mt. spotted fever)		VENEREAL DISEASES						RABIES IN ANIMALS
	1974	Cum. 1974	Cum. 1974	1974	Cum. 1974	1974	Cum. 1974	GONORRHEA		SYPHILIS (Pri. & Sec.)		Cum. 1974		
								1974	Cumulative	1974	Cumulative			
								1974	1973	1974	1973			
UNITED STATES	635	4,694	17	5	56	1	14	15,845	144,838	129,332	468	4,067	4,344	404
NEW ENGLAND	32	220	-	-	2	-	-	413	3,822	3,256	8	89	111	3
Maine *	-	20	-	-	-	-	-	24	280	198	1	9	5	1
New Hampshire	-	8	-	-	-	-	-	10	117	112	-	3	3	-
Vermont	-	3	-	-	-	-	-	22	124	45	-	-	6	-
Massachusetts	14	126	-	-	-	-	-	186	1,711	1,550	2	36	45	-
Rhode Island	5	21	-	-	2	-	-	21	320	400	-	2	3	2
Connecticut	13	42	-	-	-	-	-	150	1,270	951	5	39	49	-
MIDDLE ATLANTIC	120	761	1	-	11	-	9	1,955	18,510	16,673	100	897	948	3
Upstate New York	19	73	1	-	-	-	-	460	3,517	4,138	18	94	73	1
New York City	34	326	-	-	11	-	-	864	7,682	6,433	58	539	596	-
New Jersey	24	168	-	-	-	-	-	407	3,012	2,206	11	129	155	-
Pennsylvania	43	194	-	-	-	-	9	224	4,299	3,896	13	135	124	2
EAST NORTH CENTRAL	76	620	-	2	4	-	-	2,409	18,929	15,235	34	218	254	22
Ohio *	32	184	-	-	-	-	-	802	6,869	4,840	7	42	44	-
Indiana	2	103	-	-	-	-	-	416	2,036	1,851	5	37	54	1
Illinois	27	161	-	1	2	-	-	367	2,294	1,932	3	45	38	2
Michigan	15	172	-	1	2	-	-	570	5,626	4,965	12	71	100	-
Wisconsin	-	-	-	-	-	-	-	254	2,104	1,647	7	23	18	19
WEST NORTH CENTRAL	20	142	7	-	2	-	-	804	7,377	7,543	1	65	50	116
Minnesota	1	22	-	-	1	-	-	231	1,796	1,546	-	8	20	58
Iowa *	-	14	-	-	-	-	-	-	1,016	846	-	8	4	23
Missouri	14	77	6	-	1	-	-	250	2,122	2,901	-	36	15	3
North Dakota	-	2	-	-	-	-	-	20	123	119	-	-	-	25
South Dakota	1	7	1	-	-	-	-	37	363	393	-	1	1	-
Nebraska	-	4	-	-	-	-	-	106	610	792	-	1	1	-
Kansas	4	16	-	-	-	-	-	160	1,347	946	1	11	9	7
SOUTH ATLANTIC	145	978	1	-	4	1	4	3,688	36,504	33,715	124	1,350	1,293	58
Delaware	4	18	-	-	-	-	-	50	545	431	-	21	17	-
Maryland	9	101	-	-	-	-	1	518	3,534	2,964	9	151	163	-
District of Columbia	13	70	-	-	-	-	-	345	2,868	2,762	18	124	143	-
Virginia	6	117	1	-	-	-	-	306	3,346	3,217	13	171	106	28
West Virginia	13	64	-	-	1	-	-	61	464	498	-	3	3	9
North Carolina *	27	184	-	-	-	-	-	368	4,836	5,149	8	147	95	-
South Carolina	16	103	-	-	-	-	-	506	4,235	3,833	27	204	193	1
Georgia	26	97	-	-	-	1	2	415	7,105	5,922	11	142	272	15
Florida	31	224	-	-	3	-	1	1,119	9,571	8,939	38	387	301	5
EAST SOUTH CENTRAL	53	449	3	-	9	-	-	1,480	12,137	11,077	34	229	329	55
Kentucky	13	98	1	-	6	-	-	200	1,582	1,270	12	51	155	35
Tennessee	16	142	2	-	3	-	-	599	4,935	4,363	15	85	70	16
Alabama	16	133	-	-	-	-	-	388	3,065	2,802	5	44	22	4
Mississippi	8	76	-	-	-	-	-	293	2,555	2,642	2	49	82	-
WEST SOUTH CENTRAL	67	600	4	1	4	-	-	2,433	20,925	17,075	60	418	500	86
Arkansas	8	86	1	1	1	-	-	548	2,091	2,369	4	23	32	13
Louisiana *	7	86	1	-	1	-	-	458	4,163	3,371	15	110	141	3
Oklahoma	6	44	1	-	-	-	-	215	1,624	1,748	3	23	37	16
Texas	46	384	1	-	2	-	-	1,212	13,047	9,587	38	262	290	54
MOUNTAIN	22	137	1	-	5	-	1	467	5,282	4,797	12	85	138	12
Montana	1	12	-	-	-	-	-	32	323	299	-	-	-	-
Idaho	2	8	-	-	-	-	-	30	409	304	-	1	3	-
Wyoming	-	2	1	-	2	-	-	12	108	79	-	-	4	1
Colorado	-	16	-	-	-	-	1	114	1,437	1,305	4	19	54	-
New Mexico	12	37	-	-	-	-	-	14	781	777	3	10	15	5
Arizona	5	45	-	-	3	-	-	230	1,592	1,371	2	27	37	6
Utah	2	8	-	-	-	-	-	21	248	263	-	6	2	-
Nevada *	-	9	-	-	-	-	-	14	384	399	3	22	23	-
PACIFIC	100	787	-	2	15	-	-	2,196	21,352	19,961	95	716	721	49
Washington	3	54	-	-	2	-	-	152	1,858	1,873	-	15	29	-
Oregon	3	25	-	-	-	-	-	177	1,656	1,806	1	13	18	6
California	88	641	-	2	13	-	-	1,756	16,810	15,388	92	678	638	43
Alaska	3	20	-	-	-	-	-	53	511	475	-	1	17	-
Hawaii	3	47	-	-	-	-	-	58	517	419	2	9	19	-
Guam *	-	-	-	-	-	-	-	-	69	63	-	-	-	-
Puerto Rico	10	98	-	-	-	-	-	48	452	573	18	-	141	10
Virgin Islands	-	-	-	-	-	-	-	5	33	36	5	-	4	-

*Delayed reports: Tuberculosis: N.C. delete 2 (1973) Ohio delete 1, N.C. delete 1 (1974)
 Gonorrhea: La. delete 1, Iowa 351, Nev. 41, Guam 3 (1974)
 Syphilis: Iowa 1, Nev. 1 (1974)
 Rabies: Me. 1 (1973)

Week No.
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TABLE IV. DEATHS IN 121 UNITED STATES CITIES FOR WEEK ENDING MARCH 2, 1974

(By place of occurrence and week of filing certificate. Excludes fetal deaths)

Area	All Causes					Pneumonia and Influenza All Ages	Area	All Causes					Pneumonia and Influenza All Ages
	All Ages	65 years and over	45-64 years	25-44 years	Under 1 year			All Ages	65 years and over	45-64 years	25-44 years	Under 1 year	
NEW ENGLAND	727	447	197	33	33	36	SOUTH ATLANTIC	1,324	734	408	101	33	55
Boston, Mass.	219	124	64	11	12	15	Atlanta, Ga.	93	51	27	9	2	7
Bridgeport, Conn.	45	26	13	1	3	3	Baltimore, Md.	319	175	103	18	6	5
Cambridge, Mass.	27	17	6	3	1	4	Charlotte, N. C.	69	37	24	5	3	2
Fall River, Mass.	24	13	9	1	—	—	Jacksonville, Fla.	81	39	31	10	—	—
Hartford, Conn.	44	24	17	2	—	—	Miami, Fla.	99	65	26	3	4	5
Lowell, Mass.	21	16	4	1	—	1	Norfolk, Va.	63	31	23	6	1	6
Lynn, Mass.	23	16	7	—	—	2	Richmond, Va.	104	51	35	6	4	10
New Bedford, Mass.	39	27	10	—	1	4	Savannah, Ga.	44	23	19	—	2	1
New Haven, Conn.	54	30	17	2	2	—	St. Petersburg, Fla.	113	88	15	5	1	2
Providence, R. I.	57	33	18	3	2	5	Tampa, Fla.	87	47	26	7	3	8
Somerville, Mass.	11	9	2	—	—	—	Washington, D. C.	195	89	71	25	4	7
Springfield, Mass.	56	35	13	3	5	—	Wilmington, Del.	57	38	8	7	3	2
Waterbury, Conn.	36	29	4	3	—	—	EAST SOUTH CENTRAL	782	432	229	52	37	35
Worcester, Mass.	71	48	13	3	7	2	Birmingham, Ala.	103	47	33	5	10	—
MIDDLE ATLANTIC	3,472	2,122	927	221	97	151	Chattanooga, Tenn.	82	48	21	7	1	8
Albany, N. Y.	59	37	16	3	2	2	Knoxville, Tenn.	50	34	11	2	1	1
Allentown, Pa.	30	24	5	—	—	4	Louisville, Ky.	151	89	35	12	8	12
Buffalo, N. Y.	153	102	36	8	5	11	Memphis, Tenn.	184	101	57	11	9	2
Camden, N. J.	40	22	12	1	2	4	Mobile, Ala.	58	33	18	3	2	1
Elizabeth, N. J.	24	11	10	1	1	3	Montgomery, Ala.	42	20	15	5	2	2
Erie, Pa.	40	24	12	—	3	3	Nashville, Tenn.	112	60	39	7	4	9
Jersey City, N. J.	62	35	19	5	3	5	WEST SOUTH CENTRAL	1,261	697	354	96	62	53
Newark, N. J.	78	45	17	9	4	2	Austin, Tex.	44	29	10	1	1	3
New York City, N. Y.	1,696	1,021	451	137	37	57	Baton Rouge, La.	36	19	10	4	1	2
Paterson, N. J.	48	28	16	2	—	7	Corpus Christi, Tex.	27	16	7	2	1	1
Philadelphia, Pa.	605	371	172	24	17	7	Dallas, Tex.	182	91	62	11	11	4
Pittsburgh, Pa.	197	109	62	13	7	14	El Paso, Tex.	46	22	12	2	7	8
Reading, Pa.	43	32	9	—	1	7	Fort Worth, Tex.	114	65	37	5	4	3
Rochester, N. Y.	112	71	24	5	6	9	Houston, Tex.	250	117	81	25	12	8
Schenectady, N. Y.	25	16	7	—	1	1	Little Rock, Ark.	83	47	22	8	5	1
Scranton, Pa.	51	38	8	2	1	4	New Orleans, La.	173	97	44	21	4	2
Syracuse, N. Y.	96	61	23	6	5	4	San Antonio, Tex.	148	97	29	11	5	4
Trenton, N. J.	40	29	6	1	2	3	Shreveport, La.	66	43	16	2	5	2
Utica, N. Y.	27	14	12	1	—	1	Tulsa, Okla.	92	54	24	4	6	15
Yonkers, N. Y.	46	32	10	3	—	3	MOUNTAIN	583	343	159	35	16	20
EAST NORTH CENTRAL	2,673	1,603	713	166	93	84	Albuquerque, N. Mex.	61	35	14	5	3	7
Akron, Ohio	63	33	21	5	1	—	Colorado Springs, Colo.	36	15	17	3	1	—
Canton, Ohio	29	14	12	2	1	1	Denver, Colo.	153	87	44	13	3	4
Chicago, Ill.	718	431	181	58	20	20	Las Vegas, Nev.	31	12	13	4	—	2
Cincinnati, Ohio	156	91	43	10	8	4	Ogden, Utah	32	21	9	1	1	3
Cleveland, Ohio	239	137	74	16	6	6	Phoenix, Ariz.	122	84	23	4	5	4
Columbus, Ohio	131	74	38	12	5	1	Pueblo, Colo.	15	7	3	1	—	—
Dayton, Ohio	108	62	30	7	3	3	Salt Lake City, Utah	48	27	15	2	1	—
Detroit, Mich.	349	192	96	25	15	8	Tucson, Ariz.	85	55	21	2	2	—
Evansville, Ind.	43	30	11	—	—	1	PACIFIC	1,820	1,148	437	112	59	37
Fort Wayne, Ind.	50	36	9	2	—	5	Berkeley, Calif.	17	10	5	1	1	—
Gary, Ind.	42	19	10	7	2	4	Fresno, Calif.	64	44	9	5	4	—
Grand Rapids, Mich.	64	40	17	—	5	6	Glendale, Calif.	35	27	5	3	—	—
Indianapolis, Ind.	163	96	46	4	11	3	Honolulu, Hawaii	56	27	14	6	8	2
Madison, Wis.	38	16	11	2	4	8	Long Beach, Calif.	108	55	41	3	6	—
Milwaukee, Wis.	163	112	39	6	5	—	Los Angeles, Calif.	615	403	133	37	14	13
Peoria, Ill.	36	27	7	2	—	—	Oakland, Calif.	78	51	19	4	2	2
Rockford, Ill.	42	28	9	3	1	5	Pasadena, Calif.	35	25	8	—	—	2
South Bend, Ind.	44	31	12	1	—	5	Portland, Oreg.	136	87	37	9	1	2
Toledo, Ohio	106	73	24	4	2	1	Sacramento, Calif.	70	38	23	4	1	1
Youngstown, Ohio	89	61	23	—	4	3	San Diego, Calif.	134	85	31	6	6	2
WEST NORTHCENTRAL	846	554	195	42	30	43	San Francisco, Calif.	194	119	49	16	7	3
Des Moines, Iowa	67	51	13	—	3	7	San Jose, Calif.	52	37	8	3	2	3
Duluth, Minn.	28	19	6	2	—	1	Seattle, Wash.	143	86	33	12	6	5
Kansas City, Kans.	37	17	11	6	1	3	Spokane, Wash.	44	26	12	2	1	1
Kansas City, Mo.	126	91	28	1	1	—	Tacoma, Wash.	39	28	10	1	—	1
Lincoln, Nebr.	36	25	9	—	1	4	Total	13,488	8,080	3,619	858	460	514
Minneapolis, Minn.	123	71	32	6	10	4	Expected Number	13,007	7,725	3,526	822	446	536
Omaha, Nebr.	97	62	24	6	2	5							
St. Louis, Mo.	207	132	51	11	8	11							
St. Paul, Minn.	69	51	9	5	1	2							
Wichita, Kans.	56	35	12	5	3	6							

† Delayed report for week ending Feb. 23, 1974

FOLLOW-UP ON *SALMONELLA EASTBOURNE* OUTBREAK — United States, Canada

The outbreak of *Salmonella eastbourne* infection that has been occurring in the United States and Canada since September 1973 has been reported previously (MMWR, Vol. 23, Nos. 4, 5): a telephone case-control survey conducted in late January 1974 suggested Christmas-wrapped chocolate balls as the vehicle of infection, and shortly thereafter, results of the epidemiologic investigation of cases and then the recovery of *S. eastbourne* from chocolate balls manufactured by Regent Chocolate, Ltd., St. Hyacinthe, Quebec, Canada, indicated that chocolate from that company was the vehicle of the epidemic.

Since the last published report of this outbreak, CDC has been notified of 22 additional cases from California (1), Florida (1), Georgia (2), Kansas (1), Maine (2), Maryland (1), Michigan (1), Missouri (3), New York (3), Pennsylvania (1), Tennessee (1), and Wisconsin (5), for a total of 76 cases from 23 states. The median age for 73 of these ill persons was 3 years (range 1 day-79 years), and the numbers of affected males and females were nearly equal. Dates of onset for 54 symptomatic cases were between December 4, 1973, and February 15, 1974, with peak incidence occurring December 19-20. At least 18 ill persons were hospitalized for gastroenteritis, 1 with severe complications.

To date, 50 ill persons are known to have eaten either Christmas-wrapped chocolate balls (44) or a similar seasonal chocolate item (6) within 3 days prior to onset of illness; 10 additional cases in family members of these persons appear to have resulted from secondary spread.

In 49 of the 50 cases, the stores where the consumed chocolate was purchased have been determined. In 18 cases, the store was supplied by Triumph Candy Corporation, Englewood Cliffs, New Jersey, the U.S. distributor of Regent brand chocolate and in 13 cases by Frankford Candy Company, Philadelphia, Pennsylvania, which distributed Regent and other chocolate candy under the Frankford label. One store did not receive Regent chocolates, and in 17 cases, the supplier has not been determined.

Canada has reported 39 cases of *S. eastbourne* infection from 7 of its 9 provinces. The median age of cases was between 1 and 4 years, and the months of onset for 32 symptomatic cases ranged from September 1973 to February 1974. Of 17 ill persons known to have eaten chocolate within 3 days of onset, 12 ate Regent items.

Canadian and both state and federal U.S. laboratories have isolated *S. eastbourne* from at least 11 different chocolate items manufactured by Regent: 5 were solid Christmas balls in different packages, 2 were "penny balls" for year-round sale, 1 was chocolate blocks, and 4 were different types of Easter rabbits. In addition, epidemiologic investigation has incriminated 5 Regent Christmas items, including hollow balls, solid Santa Clauses, and solid bells, as causing illness.

CDC collaborated with a team from the Health Protection Branch, Canada National Health and Welfare, in an investigation of the Regent Chocolate, Ltd., plant in St. Hyacinthe, Quebec, February 4-13. Approximately 700 milk chocolate items, some differing only by wrapping, are manufactured by a single production process. Raw cocoa beans are roasted at 125°C for ½ hour, then refined and milled into cocoa liquor, which is mixed with cocoa butter. The dry ingredients, which include sugar, salt, and imported "crumb" (composed of dried whole milk, cocoa powder, and sugar),

are then added. Three-ton batches of the chocolate mixture are refined, then whipped in large mixers ("conches") at 60°C, allegedly for 12 hours. Slight variations in the butterfat content determine which of the 5 separate moulding plants receives the chocolate through pipes for moulding into different shapes and wrapping. There is extensive recirculation at 40°C of unmoulded or imperfectly moulded chocolate between the moulding plants and the storage tanks.

Analysis of production records for the 11 culture-positive items and the 5 items implicated epidemiologically revealed that contaminated chocolate was produced in at least 3 of the 5 moulding plants during the months of May, June, August, September, and October 1973. The possibility that contaminated chocolate was produced at other times could not be ruled out. Production of 1973 Christmas items began in April 1973.

Inspection of the factory revealed numerous opportunities for cross-contamination of processed materials by raw ingredients. For example, beans that had been roasted were exposed to airborne particles from raw beans. The only point during production and moulding at which the mixed ingredients were exposed to temperatures greater than 40°C occurred during conching, where the chocolate temperature reached 55-60°C for a variable number of hours. Although the conche temperature sheets had been discarded, analysis of conche time records revealed that during 7 of the 14 months, November 1972 through January 1974, at least 30% of the conche batches were processed for less than 10 hours total time, which would result in exposure of that chocolate to temperatures of 55-60°C for less than 5 hours; filling, heating, and emptying require approximately 5 hours. The measured water content of the chocolate at this step was usually less than 1%.

Extensive environmental sampling revealed 4 *S. eastbourne* isolates from the 2 rooms where cocoa beans are processed, 2 isolates from 1 of the 5 moulding plants (Table 1), and 1 isolate from beans cooling after roasting in the 2nd bean room. No salmonellae were isolated from the chocolate production rooms, the storage area for raw ingredients, samples of chocolate in the production process, or from samples of raw ingredients. However, except for crumb, no ingredient

Table 2
Salmonella eastbourne Isolations from Regent Chocolate, Ltd, Factory
St. Hyacinthe, Quebec — February 4-13, 1974

Samples Tested	Number Tested	Number Positive
1. Environmental samples from		
raw material storage area	46	0
raw bean room	11	2
bean roasting room	16	2
chocolate production rooms	73	0
Eriksen moulding plant	62	2
Praeleta II moulding plant	14	0
Other areas	54	0
Total	276	6 (2.2%)
2. Production line chocolate		
	25	0
3. Ingredients*		
	73	0
Total	374	6 (1.6%)

*crumb, cocoa butter, lecithin, vanillin, cocoa beans

SALMONELLA EASTBOURNE – Continued

lots used during Christmas production were available for sampling. No salmonellae other than *S. eastbourne* have been isolated from the plant.

Regent produced approximately 14 million pounds of chocolate in 1973, of which 45% would normally be sold in Canada and 55% in the United States, principally as Easter and Christmas novelty items (although a few year-round items are also sold). Less than half of the chocolate produced by Regent for the United States market is distributed under the Regent label by Triumph Candy Corporation, Englewood Cliffs, New Jersey. The remainder is distributed by 1) Frankford Candy Company, Philadelphia, Pennsylvania, under the Frankford and Woodbine labels, 2) Murray-Allen Imports, New Rochelle, New York, under the Murray-Allen, Barricini, and Loft labels, and 3) Triumph under the following labels; World Candy, Holiday, Shari, Mayfair, Holiday Inn, Van Houten, Family Treats, Mr. Milky, Zachary, and El Jay. Some of these firms also distribute chocolate that is made by companies other than Regent under the same brand names. The Regent chocolate is apparently distinguishable at the retail and consumer level only by the "made in Canada" label on the package.

On February 12, 1974, the Regent plant voluntarily halted production to attempt to eliminate contamination and to modify several production processes. On February 26, 1974, Canada's Health Protection Branch announced a total recall of chocolate produced by Regent Chocolate, Ltd., and marketed within Canada. A recall initiated by the Food and Drug Administration of all Regent chocolate products distributed in the United States was announced on March 5, 1974.

Investigation of new cases, the relation of illness to chocolate consumption, and the potential role of raw cocoa beans and other ingredients as the initial source of salmonella contamination in this outbreak continues.

(Reported by members of the Bureau of Epidemiology and Bureau of Bacteriology, Laboratory Centre for Disease Control, and members of the Foods Directorate, and the Field

Operations Directorate, Health Protection Branch, Department of National Health and Welfare, Ottawa, Canada; the Food and Drug Administration; the Enteric Unit, Enterobacteriology Section, Division of Bacteriology, Bureau of Laboratories, and the Enteric Diseases Section and Epidemiologic Services Laboratory Section, Bacterial Diseases Division, Bureau of Epidemiology, CDC; and 8 EIS Officers.)

Editorial Note

Current evidence suggesting that a raw ingredient, possibly the cocoa beans, was the source of contamination of the chocolate includes: 1) the variety of contaminated finished chocolate products, from several of the separate moulding plants, and 2) the finding of environmental cultures positive for *S. eastbourne* only in a moulding plant and in an early stage of the chocolate process, in the rooms where beans were processed. Cross-contamination between raw and roasted beans could have allowed recontamination after the roasting step. The dryness of chocolate apparently protects salmonellae from heat: exposure at 70°C for 12 hours is required to achieve 90% die-off of *Salmonella typhimurium* blended into milk chocolate (1). The chocolate in this plant did not reach 70°C in the conching stage and was often conched for less than 12 hours. The remixture and recirculation of old and newly produced chocolate may have contributed to the prolonged duration of contamination.

CDC is not aware of reports of salmonella contamination in cocoa beans, although cocoa powder has been reported as containing salmonellae and has been implicated as a cause of an outbreak reported previously (2,3).

References

- Goepfert JM, Biggie RA: Heat resistance of *Salmonella typhimurium* and *Salmonella senftenberg* 775W in milk chocolate. *Appl Microbiol* 16:1939, 1968
- World Health Organization: Salmonella surveillance, 2nd quarter 1968. *Weekly Epidemiological Record* Vol. 43, No. 19, 19 May 1969
- World Health Organization: Salmonella surveillance other than *S. typhi* and *S. paratyphi*, 1971. *Weekly Epidemiological Record* Vol. 48, No. 39, 28 Sept 1973

CURRENT TRENDS
INFLUENZA – United States

Outbreaks of influenza-like disease have been reported to CDC from 34 states (Figure 2), and in almost all of these states, influenza B virus has been confirmed as the etiologic agent. The most recent outbreaks have occurred in the South Atlantic, New England, and Pacific regions; the disease appears to be declining throughout the Midwest. Strains of influenza B causing these outbreaks are either B/Hong Kong/5/72 or strains "intermediate" between B/Hong Kong and the previously prevalent B/Victoria. Although the disease continues to be widespread geographically, pneumonia and influenza mortality reported to CDC from 121 U.S. cities remains below normal seasonal levels. To date, there have been no reported outbreaks of influenza A, although CDC has received scattered reports of influenza A isolates.

(Reported by the Viral Diseases Division, Bureau of Epidemiology, and the International Influenza Center for the Americas, CDC.)

Figure 2
STATES THAT HAVE REPORTED INFLUENZA B OUTBREAKS
SINCE DECEMBER 1973



REYE'S SYNDROME SURVEILLANCE - United States

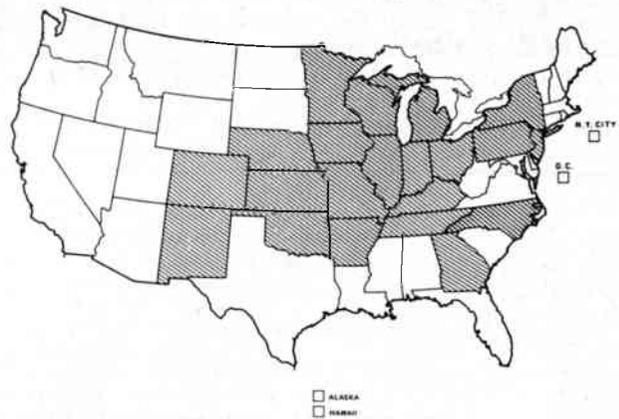
Since December 15, 1973, 146 cases of suspect or confirmed Reye's syndrome have been reported to CDC from 21 states: Arkansas (1), Colorado (1), Georgia (2), Illinois (11), Indiana (7), Iowa (6), Kansas (7), Kentucky (2), Michigan (27), Minnesota (5), Missouri (5), Nebraska (5), New Jersey (5), New Mexico (1), New York (7), North Carolina (5), Ohio (15), Oklahoma (6), Pennsylvania (10), Tennessee (4), Wisconsin (14) (Figure 3). Cases have been evenly divided between males and females, with a median age of 11 years (range 4 months-18 years). The nationwide death to case ratio has averaged 34%.

(Reported by the Viral Diseases Division, Bureau of Epidemiology, CDC.)

Editorial Note

Case reporting of Reye's syndrome within the last week has decreased indicating that the widespread outbreak may be declining, especially in the Midwest where there has been a decline in the incidence of influenza B. Continued surveillance and reporting of cases to local and state health departments are encouraged.

Figure 3
STATES THAT HAVE REPORTED SUSPECT OR CONFIRMED CASES OF REYE'S SYNDROME SINCE DECEMBER 1973



SUMMARY OF REPORTED CASES OF INFECTIOUS SYPHILIS

CASES OF PRIMARY AND SECONDARY SYPHILIS:

Reporting Area	January		Calendar Year Cumulative January - January		Reporting Area	January		Calendar Year Cumulative January - January	
	1974	1973	1974	1973		1974	1973	1974	1973
Connecticut	12	23	12	23	Arkansas	13	10	13	10
Maine	1	1	1	1	Louisiana	59	59	59	59
Massachusetts	62	80	62	80	New Mexico	5	8	5	8
New Hampshire	1	2	1	2	Oklahoma	15	13	15	13
Rhode Island	2	1	2	1	Texas	100	122	100	122
Vermont	0	3	0	3	DHEW REGION VI TOTAL	192	212	192	212
DHEW REGION I TOTAL	78	110	78	110	Iowa	8	2	8	2
New Jersey	74	85	74	85	Kansas	5	1	5	1
New York (Excluding NYC)	52	38	52	38	Missouri	16	14	16	14
New York City	284	320	284	320	Nebraska	0	1	0	1
DHEW REGION II TOTAL	410	443	410	443	DHEW REGION VII TOTAL	29	18	29	18
Delaware	15	8	15	8	Colorado	12	29	12	29
District of Columbia	47	62	47	62	Montana	0	0	0	0
Maryland (Excluding Baltimore)	25	22	25	22	North Dakota	0	0	0	0
Baltimore	38	54	38	54	South Dakota	0	1	0	1
Pennsylvania (Excluding Philadelphia)	16	23	16	23	Utah	4	0	4	0
Philadelphia	57	38	57	38	Wyoming	0	0	0	0
Virginia	98	72	98	72	DHEW REGION VIII TOTAL	16	30	16	30
West Virginia	3	2	3	2	Arizona	26	23	26	23
DHEW REGION III TOTAL	299	281	299	281	California (Excluding LA and SF)	128	97	128	97
Alabama	22	11	22	11	Los Angeles*	207	223	207	223
Florida	170	122	170	122	San Francisco*	73	60	73	60
Georgia (Excluding Atlanta)	65	68	65	68	Hawaii	2	7	2	7
Atlanta*	36	39	36	39	Nevada	11	6	11	6
Kentucky	21	41	21	41	DHEW REGION IX TOTAL	447	416	447	416
Mississippi	22	31	22	31	Alaska	0	1	0	1
North Carolina	55	65	55	65	Idaho	0	2	0	2
South Carolina	71	31	71	31	Oregon	10	5	10	5
Tennessee	44	31	44	31	Washington	15	24	15	24
DHEW REGION IV TOTAL	506	439	506	439	DHEW REGION X TOTAL	25	32	25	32
Illinois (Excluding Chicago)	18	17	18	17	UNITED STATES TOTAL	2169	2185	2169	2185
Chicago*	56	71	56	71	Puerto Rico	75	70	75	70
Indiana (Excluding Indianapolis)	16	17	16	17	Virgin Islands	0	5	0	5
Indianapolis*	5	14	5	14					
Michigan	36	49	36	49					
Minnesota	4	10	4	10					
Ohio	23	14	23	14					
Wisconsin	9	12	9	12					
DHEW REGION V TOTAL	167	204	167	204					

Note: Cumulative totals include revised and delayed reports through previous months.
Source: HSM 9.98 CDC, VD branch, Atlanta, Ga. 30333

*County Data

**CURRENT TRENDS
PRIMARY AND SECONDARY SYPHILIS
United States, January 1974**

In January 1974, reported cases of primary and secondary syphilis decreased 0.7% from the number reported in January 1973. Infectious syphilis cases have decreased 2.2% in the 7-month period, July 1973-January 1974, compared with the same period the previous year.

Nine of a total of 59 reporting areas recorded an in-

crease of 40 or more cases in the 7-month period, July 1973-January 1974, compared with the same period in 1973. Some of these areas have recently intensified their syphilis control efforts.

(Reported by the Venereal Disease Control Division, Bureau of State Services, CDC.)

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The data in this report are provisional, based on weekly telegraphs to CDC by state health departments. The reporting week concludes at close of business on Friday; compiled data on a national basis are officially released to the public on the succeeding Friday.

In addition to the established procedures for reporting morbidity and mortality, the editor welcomes accounts of interesting outbreaks or case investigations of current interest to health officials.

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